Exploring the Cultural Beliefs about Type 2 Diabetes Management and Financial Barriers to Diabetes Care Among Latino Farm Workers

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Problem Statement and Background: In 2010, the CDC reported that approximately 25.8 million people (8.3% of the population) were estimated to have type 2 diabetes. A chronic disease, diabetes management involves the use of oral hypoglycemic agents and/or insulin as well as the adherence to a recommended diet and regular physical exercise to maintain gylcemic control (≤ 7%) and the reduction of insulin resistance through weight loss. The American Diabetes Association recommends that, at initial diagnosis, physicians and health providers work with their patients to develop a diabetes self-management education (DSME) to raise their awareness about the disease and its sequelae. DSME is the "ongoing process of facilitating the knowledge, skill, and ability necessary for diabetes self-care" (American Diabetes Association 2011; 522). Effective DSME results in positive outcomes; improved glycemic control, reduction of disease sequelae, and increased quality of life.

Latinos, Cultural Beliefs and Diabetes: Latinos are the fastest growing ethnic group in the U.S., thus their health needs must become one of the priorities for public health officials as well as health policy makers. The cultural beliefs of Latino diabetic patients have been found to have an impact on their treatment behaviors (Hunt, Valenzuela, Pugh 1998). For example, studies have found that 67% to 95 % of Latinos use some type of complementary and alternative medicine (CAM) to control their glucose levels, although there is little scientific evidence to support or refute the safety and efficacy of CAM medication, (Trangmar and Diaz 2008; Villa-Caballero et al., 2010). Thus, it is important to study how patients understand and "make sense" of their illness (Ferzacca, 2000; (Hunt and Arar 2001). Such understanding is crucial to achieving the goal of developing cultural appropriate DSME for Latinos, particularly for

women, that include cultural and religious beliefs, family members for social support, dietary advice on modified preferred tradition dishes (Vincent, Clark, Zimmer, and Sanchez 2006; Coronado, Thompson, Tejeda, & Godina, 2004; Oomen, Owen, and Suggs 1999).

***Latinos and Financial Barriers to Diabetes Care*:** The lack of health insurance is the primary barrier to diabetes care for Latinos (Ariza, Vimalananda, and Rosenzweig 2010). More than one third of Hispanics under 65 years of age have no health insurance (Cristancho, Peters, and Mueller 2008). Tseng et al. (2008) reported that Latino diabetics have higher cost-related medication underuse compared to African Americans and non-Hispanic whites. Immigration status influences access to health care services for many Latinos. Latinos also have limited access to transportation which limits their ability to get to health care services for themselves and family members. Transportation is a more severe problem for low income Latinos residing in rural areas where there is limited or no public transportation (Cristancho, Peters, and Mueller 2008).

***Significance**:* The American Diabetes Association recommends that health providers consider ‘‘cultural factors’’ when developing management plans for better outcomes and that they consider “income” as a a barrier to effective treatment (American Diabetes Association 2011). Yet, these data are not always readily available to health care providers treating growing Latino communities, especially those that work with marginalized populations such as migrant farm workers. This study will address this information gap and provide health providers serving Latino farm workers with the data required to design diabetes management plans and behavioral interventions that are not only culturally appropriate, but also consider the financial barriers that hinder their patients’ ability to effectively manage the disease.

Guiding Theoretical Framework: This project is guided by critical medical anthropology theory which postulates that human biological conditions should be viewed through the prism of political economic and cultural processes. The tensions that individuals experience with the biomedical system are part of the ongoing power, class, and gender conflict that are inherent in a profit driven health care system (Baer, 1996; Singer, 1998; Goodman and Leatherman, 1998). Thus, macro-level social, political and economic forces create structural barriers and inequalities such as poverty, class, and racism that are the primary explanations for the health disparities found among ethnic minorities and marginalized populations (Baer, 1996; Singer, 1995; Schoenberg *et al*, 2005). Cultural belief models about illness influence how individuals perceive and utilize the biomedical system (Chrisman and Kleinman 1983). Cultural beliefs and practices about ill health influence how individuals negotiate their formal and informal health care systems and/or integrate two systems (Baer, 1982). Yet it cannot be ignored that an individual's ability to act in accordance with their cultural beliefs and/or biomedical guidelines is often be constrained by socio-economic factors.

Objectives, Specific Aims: The proposed pilot project will set the stage for a series of studies that will be designed to expand on our knowledge of how culture affects self-management of diabetes among Latinos, the fastest growing minority group in the United States, focusing on farmworkers who carry a disproportionate burden of disease and encounter numerous challenges in accessing health care. The overarching research questions are: What are Latino diabetics' cultural beliefs about diabetes management? and What are the financial costs that impact Latino diabetics' self-management? The aims of the project are to: 1) Explore the cultural beliefs about diabetes self-management among Latino diabetic farmworkers and 2) Examine the financial costs that impact how Latino diabetics' self-manage their disease.

Research Plan: This study will take place in Southwest Florida (SWF), primarily Hillsborough County and be done in collaboration with Catholic Mobile Medical Services (CMMS) at the San Jose Mission in Dover. CMMS provides free and low cost health care to Latino rural and agricultural workers in Hillsborough County. Over the past year, CMMS has provided services to1,951 patients. Utilization has increased approximately 10% annually and approximately 40 patients are seen per week. In total, 60 to 66 % of patients are of Mexican descent, 7% to 9% are U.S. citizens with the rest originating from various Central and South American countries. In 2010, CMMS followed 173 hypertensive patients and 92 diabetic patients. CMMS will partner with the USF research team to consult and develop instruments, assist in data analysis, and disseminate findings. CMMS will be compensated $2,000 for their role in the research study.

Recruitment of Participants and Sampling Techniques: A purposive sample of men and women Latinos (over 21 years of age) who have been diagnosed with diabetes will be recruited with the assistance of CMMS, a community liaison, and a bilingual graduate assistant. We will aim to interview 20-30 Latino diabetic farmworkers and 5-10 health providers that work with this population. According to Guest et al a sample size of 15 or 20 is usually sufficient for most domains (Guest, et al. 2006). The sampling procedures used are appropriate due to the exploratory and ethnographic nature of this study (Bernard 2002; Bernard 1996). Each participant interviewed will receive $25.

Methods: Study methodology will consist of participant observation and ethnographic interviews that include the use of 1) structured (e.g., free lists, and rank ordering) and 2) semi-structured (e.g., open-ended items) data collection techniques (Bernard 2002). The purpose of the ethnographic interviews is to obtain culturally relevant descriptions of diabetes self-management, including possible folk etiologies and treatments. Within the ethnographic context of this study, combining qualitative and quantitative data collection techniques will help address

the complexity of domains such as disease management behavior in a way that quantitative instruments alone cannot. Further, the combination of methods allows for data triangulation and provides a richer understanding of the sociocultural and economic context of diabetes further improving the internal validity of the findings. Institutional Review Board approval will be obtained. All participants will be informed about the nature of the study, that their participation is voluntary and that information will be kept confidential.

Data Collection and Analysis: The ethnographic interviews will take approximately 30 minutes to complete. Interviews will be done face to face at participants' home or at another place (e.g., CMMS) that is convenient to them. The interviews will be digitally recorded with the participants consent. Each ethnographic questionnaire includes two parts: a)a structured portion that includes freelists which will result in data that will be analyzed quantitatively through a cultural consensus model (a series of anthropological statistical procedures and b) an open-ended portion that will be analyzed qualitatively using thematic and content analysis techniques. The data will be coded using ATLAS.ti, a qualitative data software program. Qualitative data will provide a deeper understanding of the cultural explanations that inform illness experience and disease management behavior (O'Mahony and Donnelly 2007). Participants will also be asked a series of demographic questions (e.g., age, length of time in US, education etc).

Timeline: Table 1 details the project timeline from Feb 2012 to January 2012.

	Feb	Mar	Apr	May	June	Jul	Aug	Sep	Oct	Nov	Dec	Jan
Obtain IRB Approval	X	X										
Develop/Pilot test interview guide		X										
Ethnographic interviews			X	X	X							
Data Entry – Transcription				X	X	X						
Data analysis					X	X	X					
Manuscript and grant preparation					X	X	X	X	X	X	X	X

Anticipated Outcomes: It is expected that the information gained from the ethnographic interviews will provide insights about the sociocultural factors that influence diabetes self-management. Results will be disseminated through conference presentations and peer-reviewed publications. It is expected that at least two manuscripts will be written and submitted. Results will also be submitted to the Society for Applied Anthropology Annual meeting and American Public health Association annual meeting, Furthermore; this study is designed as a pilot project to provide preliminary data for two larger proposals to be submitted to the National Institute of Health and the American Diabetes Association. If awarded, this project will also help further the career development of a junior Latina researcher and faculty member.

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